

# Work Order ID 86222

June-25-12 8:39:20 AM

**\*86222\***

Page 1

Item ID: D212-664-201TRN

Accept

**\*N9000040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Crosstube Turning Detail

Start Date: 25/06/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 09/07/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: *MLJ*

Date: *12/06/25* Tooling:

Run Start **\*NR1\***

QC:

Date: SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D212-664-241	Rev D
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100	MORI SEIKI CNC LATHE LARGE	0.00
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**\*100\***

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA114

2-Turn first side as per Folio FA114

3-Blend transition lines only, \*\*do not sand whole tube\*\*:

FOLIO REV: *41*

DWG REV: *5*

\*Use mill bastard file, brush file repeatedly with file card.

\*Do not use sandpaper coarser than 320 grit.

*1* *Ø*  
*mm.L*  
*12/06/25*  
*Pto*

110	QC1- Inspect dimensions to dimension sheet	0.00
-----	--	------

**\*110\***

QC

Memo

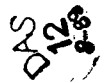
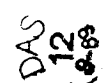

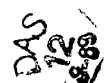

0.00

Quality Control

*1* *Ø*  
*mm.L*  
*12/06/25*

W/O: 86222		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D212-664-281 TRD PAR #: \_\_\_\_\_ Fault Category: Landing gear / cross tabs NCR: Yes (NO) DQA: HA Date: 12/08/22  
 Resolution: use as is Disposition: use as is QA: N/C Closed: TC Date: 8/22/12

NCR: 12-1736		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/8/13	100	Cuff is 0.006" below tolerance on O.D. P.C. material not Round	 12/8/13	Acceptable	 12/8/13	 12/06/13	 12/8/13	 8/08/13

NOTE: Date & initial all entries

# Work Order ID 86222

**\*86222\***

Page 2

June-25-12 8:39:20 AM

Item ID: D212-664-201TRN

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Crosstube Turning Detail

Start Date: 25/06/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 09/07/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***  
Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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120

0.00

**\*120\***

MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA114

2-Blend transition lines only, \*\*do not sand whole tube\*\*:

\*Use mill bastard file, brush file repeatedly with file card.

\*Do not use sandpaper coarser than 320 grit.

FOLIO REV: AD

DWG REV: D

3-Remove sand and plugs

4- scribe batch # and part # as per dwg

130

QC1- Inspect dimensions to dimension sheet

0.00

**\*130\***

QC

Memo

0.00

Quality Control

NOTE: Date & Initial all entries  
H:\FORMS\Quality Assurance\approved QAINCRAWO RevE

*man L*  
*12/06/20*

**Resolution:** \_\_\_\_\_ **Disposition:** \_\_\_\_\_ **QA: N/C Closed:** \_\_\_\_\_ **Date:** \_\_\_\_\_

NCR:		<b>WORK ORDER NON-CONFORMANCE (NCR)</b>						
DATE	STEP	Description of NC Section A	Corrective Action      Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

# Work Order ID 86222

June-25-12 8:39:20 AM

**\*86222\***

Page 3

Item ID: D212-664-201TRN

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Crosstube Turning Detail

Stop **\*NS2\***

Start Date: 25/06/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 09/07/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

140

QC8- Inspect parts - second check

0.00

**\*140\***

QC

Memo

0.00

Quality Control

DAS 16  
9-83 17/06/15

TW

12-8-15

145

0.00

**\*145\***

Crosstubes

Memo

0.00

Crosstubes

GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.

TW

12-8-15

150

~~Crosstubes Chemical Conversion~~

0.00

**\*150\***

HandFXtube

Memo

0.00

Hand Finishing Crosstubes

RM

12-8-19

TW

1- Pressure wash inside and out  
2- Acid Etch tube in and out  
Use red scotch brite.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 86222

June-25-12 8:39:20 AM

**\*86222\***

Page 4

Item ID: D212-664-201TRN

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Item Name: Crosstube Turning Detail

Stop

**\*NS2\***

Start Date: 25/06/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 09/07/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

**\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop

**\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

160

QC21-Inspect Chemical Conversion Coat

0.00

**\*160\***

QC

Memo

0.00

Quality Control

170

Packaging

0.00

**\*170\***

Packaging

Memo

0.00

Packaging

Identify and stock in kanban rack  
Location: CC

180

QC21- Final Inspection - Work Order Release

0.00

**\*180\***

QC

Memo

0.00

Quality Control

DAS  
16  
9-89 12/06/20

MO 12/8/20

MCS 12/08/20

MCS 12/08/20

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

June-25-12 8:39:24 AM

Page 1

Work Order ID: 86222

\*86222\*

Parent Item: D212-664-201TRN

\*D212-664-201TRN\*

Parent Item Name: Crosstube Turning Detail

Start Date: 25/06/2012

Required Date: 09/07/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A 08-03-06 new issue DD verified by:ec  
IPP Rev B 08.04.02 Removed polish EC verified DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6006-129		Manufactured	No			120	Each	27.0000	1	1			
*D6006-129*									**				
Crosstube Material													

Location

Loc Qty

Loc Code

LG

27

23970

2

26550

3

34690

1

69838

21

mm 6/12/06/25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	86222
<b>Description:</b> Crosstube Assembly (205/212 High Aft)		<b>Part Number:</b>	D212-664-241
<b>Inspection Dwg:</b> D212-664-241 <b>Rev:</b> D		<b>Page 1 of 2</b>	

### FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension		Tolerance	Actual Dir	Accept	Method	Comments
SIDE A	0.200	+/-0.010				
	R0.063	+/-0.010				
	2.990	+0.005/-0.000	2			
	5.237	+/-0.030	5.1			
	2.600	+0.005/-0.000	2			
	2.685	+0.005/-0.000	2			
	2.770	+0.005/-0.000	2			
	2.854	+0.005/-0.000	2			
	2.938	+0.005/-0.000	2			
	3.021	+0.005/-0.000	3			
	3.133	+0.005/-0.000	3			
	3.179	+0.005/-0.000	3			
SIDE B	0.200	+/-0.010	200	/	vern	CWC-08
	R0.063	+/-0.010	063	/	RG	
	2.990	+0.005/-0.000	2.990 - 2.986	/	vern	CWC-08
	5.237	+/-0.030	5.237	/		
	2.600	+0.005/-0.000	2.604	/		
	2.686	+0.005/-0.000	2.688	/		
	2.770	+0.005/-0.000	2.775	/		
	2.854	+0.005/-0.000	2.854	/		
	2.938	+0.005/-0.000	2.943	/		
	3.021	+0.005/-0.000	3.025	/		
	3.133	+0.005/-0.000	3.137	/		
	3.179	+0.005/-0.000	3.181	/		
	124.362	+/-0.020	124.360	/	total	LG-25

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

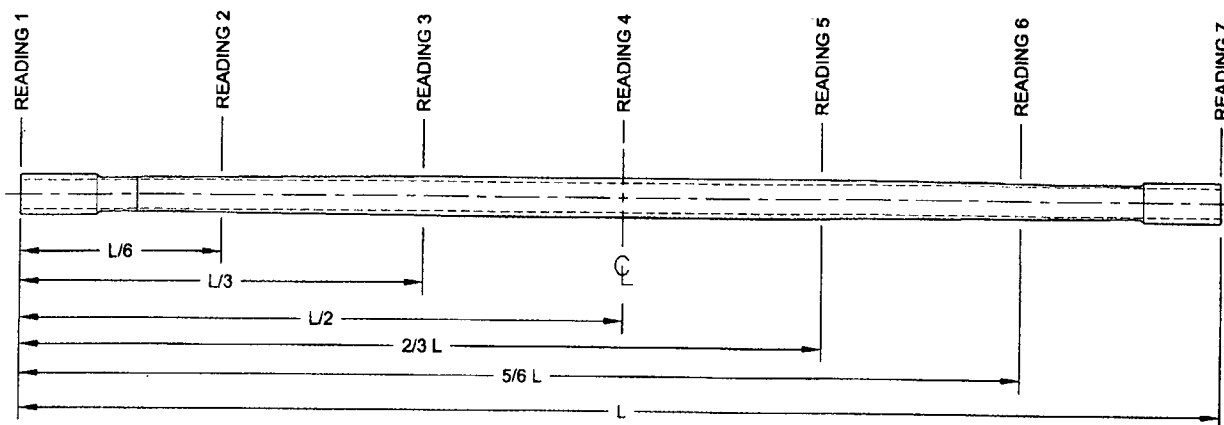
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 26222
<b>Description:</b> Crosstube Assembly (205/212 High Aft)	<b>Part Number:</b> D212-664-241
<b>Inspection Dwg:</b> D212-664-241 <b>Rev:</b> D	<b>Page 2 of 2</b>

### WALL THICKNESS MEASUREMENT



Location	WALL THICKNESS MEASUREMENT (IN)				Deviation $\Delta w$ (max-min)	TOLERANCE
	w1	w2	w3	w4		
READING 1 L= 0"	.391	.372	.384	.397	.025	0.062"
READING 2 L= 15	.268	.244	.251	.279	.035	
READING 3 L= 30	.393	.381	.376	.386	.017	
READING 4 L= 62	.517	.509	.519	.519	.010	
READING 5 L= 30	.387	.365	.381	.404	.039	
READING 6 L= 15	.267	.234	.256	.286	.052	
READING 7 L= curf	.388	.371	.383	.396	.025	

#### Calibration Result

Actual Block Thickness: 250-750

SITESCAN 250 Measured Thickness: 250-750

<b>Measured by:</b> <i>nan l</i> <b>Date:</b> 12/08/07	<b>Audited by:</b> <i>[Signature]</i> <b>Date:</b> 12/08/07	<b>Preliminary Approval:</b> <b>Date:</b> 12/08/07	
---	--	---	--

Rev	Date	Change	Revised by	Approved
A	05.04.27	New Issue (P/O D412-664-201)	KJ/JLM	
B	06.03.09	Tolerance for 5.237 was +/-0.001	KJ/JLM	
C	07.05.08	Dwg Rev. updated	KJ/JLM	
D	10.08.03	Dimension 124.362 was 124.36	KJ	
E	12.06.04	Wall thickness form added	KJ	<i>[Signature]</i>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Item	Qty -241	Qty -241B	Part Number	Description
1	X		D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
2		X	D212-664-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)
3	1	1	D6006-129	CROSSTUBE
4	2	2	D2940-1	SUPPORT
5	4	4	D3595-063-530	RUBBER CUSHION
6	4	4	MS21920-28	CLAMP (OR MS21920-30)
7	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

# **GENERAL NOTES:**

- MATERIAL: MANUFACTURED FROM D6006-129  
FINISHED LENGTH = 124.362±0.020
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- WEIGHT: D212-664-241 = 44.2 lbs (PER IIN-D212-664)  
D212-664-241B = 44.2 lbs (PER IIN-D212-664)
- PART IS SYMMETRIC ABOUT CENTERLINE.
- RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE D2940-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY

SUBJECT TO AMENDMENT

WITHOUT NOTICE

WORK ORDER

NO. 86222 405

12/06/25

UNDER REVIEW

DEO ATTACHED

RELEASED  
2009 -10-29

D	REFORMAT/REVISE GENERAL NOTES/PART LIST; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -241B (ZN D4-2, B4-2); REMOVED REF & ADD TOLERANCES (ZN D8-3 & C4-3, C6-3 & A8-3); RELOCATED FLAG #5 PER PAR 08-046 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	09.09.30
C	REMOVE -1009 ABRASION STRIP; ADD MAGNOBOND 6398, CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	PH	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN	<u>PH</u>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	<u>RF</u>		
CHECKED	<u>PH</u>	DRAWING NO.	REV. D
MFG. APPR.	<u>PH</u>	D212-664-241	SHEET 1 OF 4
APPROVED	<u>PH</u>	TITLE	SCALE
DE APPR.	<u>PH</u>	CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
DATE	09.09.30	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



86222

12 13 15  
D2940-1 SUPPORT  
MS21920-28 CLAMP, 2X  
D3595-063-530 RUBBER CUSHION, 2X  
2 PL

A5-2  
A  
A

14.00 (-241)  
OR 13.75 (-241B) D

D212-664-601  
BENT TUBE

SYM

D212-664-241/-241B  
ASSEMBLY DETAIL D

ECO #1-614  
11.07.26  
UNDER REVIEW  
11/08/26

DEO ATTACHED

RELEASED  
2009-10-28

12  
APPLY MAGNOBOND  
BETWEEN D2940-1 AND  
CROSSTUBE

D2940-1 SUPPORT, REF

13 15  
MS21920-28  
CLAMP, REF

D3595-063-530 RUBBER CUSHION  
UNDER CLAMP, REF

SECTION A-A D8-2  
SCALE 4X

DESIGN	PH	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	98	DRAWING NO.	REV. D
MFG. APPR.	DS	D212-664-241	SHEET 2 OF 4
APPROVED	AP	TITLE	SCALE
DE APPR.	11	CROSSTUBE ASSY (205/212 HI AFT)	NTS
DATE	09.09.30	COPYRIGHT © 2000 BY DART AEROSPACE LTD	
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**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

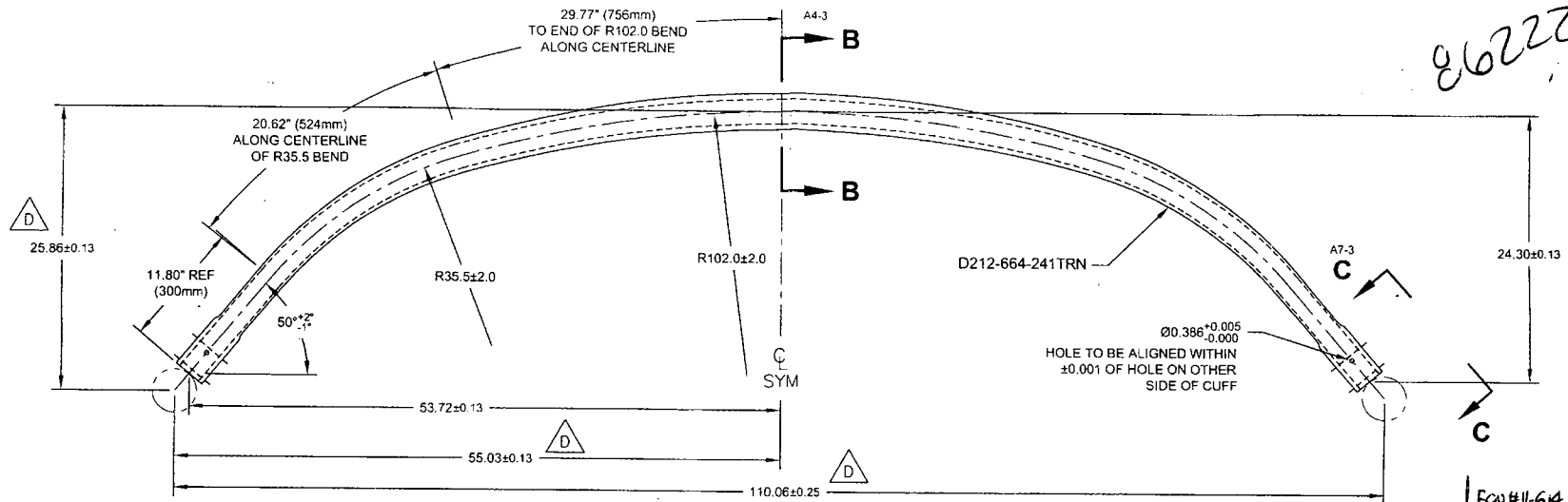
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

8 7 6 5 4 3 2 1

86222



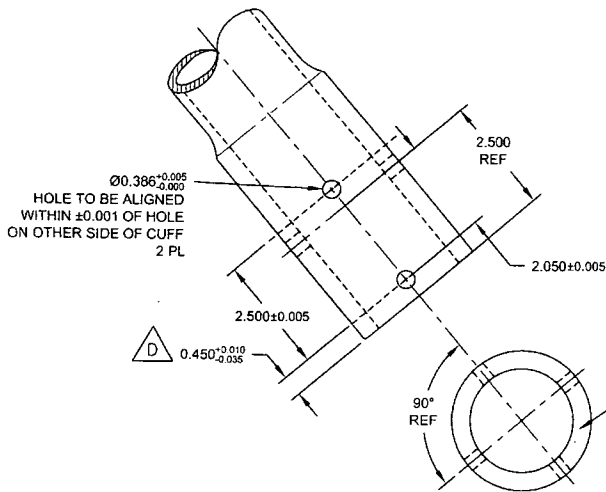
**D212-664-601** 10 D  
**BENDING AND DRILLING DETAIL**

ECO #11-614  
 11.07.26

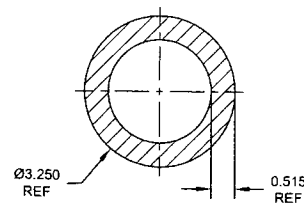
**UNDER REVIEW**  
09/11/26

**DEO ATTACHED**

**RELEASED**  
 2009-10-29  
*MD*



**VIEW C-C: CUFF DETAIL** D2-3  
 SCALE 3X



**SECTION B-B** 04-3  
 SCALE 4X

DESIGN	<i>PH</i>	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>PS</i>	DRAWING NO.	REV. D
MFG. APPR.	<i>PS</i>	D212-664-241	SHEET 3 OF 4
APPROVED	<i>PS</i>	TITLE	SCALE
DE APPR.	<i>PS</i>	CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
DATE	09.09.30	<small>COPYRIGHT © 2000 BY DART AEROSPACE LTD          THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1

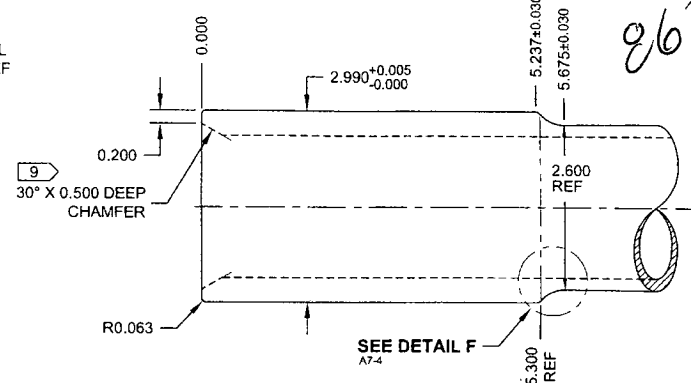
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

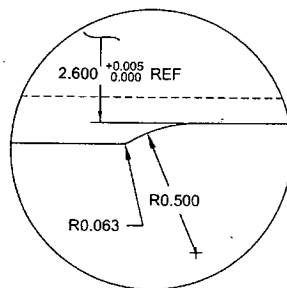


**DETAIL D:**  
**CROSSTUBE CUFF** D8-4  
**SCALE 5X**

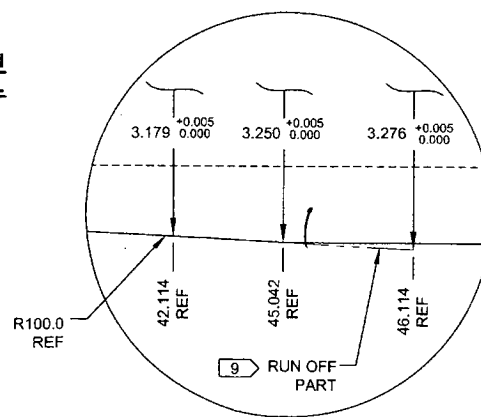
62-11-614  
 11.07.28  
 UNDER REVIEW  
 9/10/13

DEO ATTACHED

RELEASED  
2009-10-29



**DETAIL F:**  
**CUFF TRANSITION** C2-4  
**SCALE 10X**



**DETAIL E:**  
**TAPER RUN-OFF** C5-4  
**NOT TO SCALE**

DESIGN	PH	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	<b>HAWKESBURY, ONTARIO, CANADA</b>	
CHECKED	Q	DRAWING NO.	REV. D
MFG. APPR.	DS	D212-664-241	SHEET 4 OF 4
APPROVED	NO	TITLE	SCALE
DE APPR.	TH	CROSSTUBE ASSY (205/212 HI AFT)	NT
DATE	09.09.30	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND NOT BE LOANED, REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DRAWING NO. D212-664-241	TITLE CROSSTUBE ASSY (205/212 HI AFT)	REV. D	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D212-664-241-D-1	SHEET NO. SHEET 1 OF 2	SCALE NTS
DRAWN	CHECKED	MFG. APPR.	APPROVED	DE APPR.			
DATE 11.04.07	DATE 11.04.11	DATE 11.04.12	DATE 11/04/12	DATE 11.04.12			

**PURPOSE:**

ADD AN INSPECTION WINDOW TO UNDERSIDE OF CROSSTUBE.

**CHANGE:**

NOTES 2 OF SHEET 1 IS AMENDED AS FOLLOWS:

**IS:**

- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
MASK UNDERSIDE OF CROSSTUBE AS SHOWN (HATCHED AREA) AND  
PAINT OUTSIDE PER DART QSI 005 4.2  
REMOVE MASKING AND APPLY CLEAR COAT

**WAS:**

- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2

RELEASED  
2011-04-18

UNDER REVIEW

11.06.13

ECN#1-614

11.07.20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

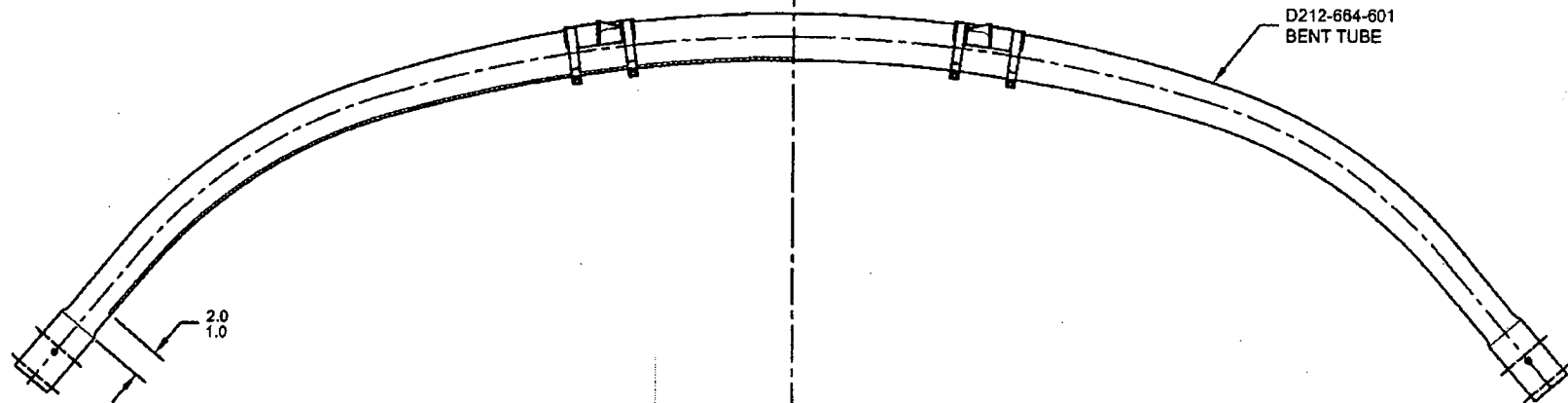
**NOTE:** Date & initial all entries



DRAWING NO. D212-664-241	TITLE CROSSTUBE ASSY (205/212 HI AFT)	REV. D	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D212-664-241-D-1	SHEET NO. SHEET 2 OF 2	SCALE NTS
DRAWN	CHECKED <i>UP</i>	MFG. APPR. <i>E</i>	APPROVED <i>MD</i>		DE APPR. <i>MD</i>		
DATE 11.04.07	DATE 11.04.11	DATE 11.04.12	DATE 11/04/12		DATE 11.04.12		

**IS:**

**WAS:**

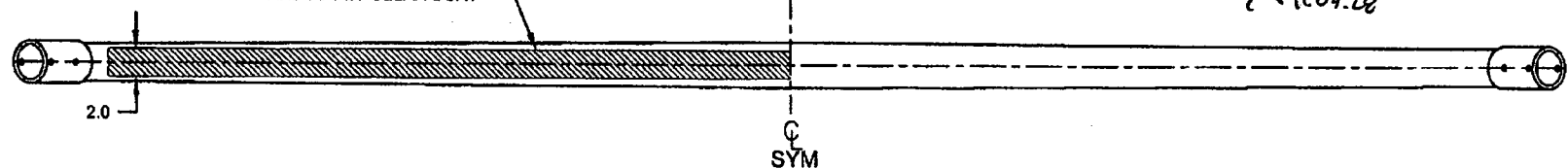


**D212-664-241-241B  
ASSEMBLY DETAIL**

**RELEASED**  
2011-04-18

**UNDER REVIEW**

MASK AREA PRIOR TO PAINTING,  
REMOVE MASKING AFTER PAINT  
AND APPLY CLEAR COAT



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DRAWING NO. D212-664-241	TITLE CROSSTUBE ASS'Y (205/212 HI AFT)	REV. D	<b>DART AEROSPACE LTD ENGINEERING ORDER</b>	D.E.O. NO. D212-664-241-D-2	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>q</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>DS</i>	APPROVED <i>MD</i>	DE APPR. <i>#</i>		
DATE 11.07.15	DATE 11.07.20	DATE 11.07.21	DATE 11/27/21	DATE 11.07.21		

**PURPOSE:**

REPLACE MAGNOBOND WITH PROSEAL.

**CHANGE:**

**IS:**

Item	Qty -241	Qty -241B	Part Number	Description
7	A/R	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

**WAS:**

7	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
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NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

**IS:**

12) TO INSTALL D2940-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.

15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

**WAS:**

12) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.

15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

**RELEASED**  
2011-07-28  
*MD*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries